

***Smethis corallica* sp. nov. (Crustacea, Brachyura, Raninidae),  
the first member of the Smethinae to be recorded  
from the Indo-West Pacific region**

by P. J. F. DAVIE

**Abstract.** — *Smethis corallica* sp. nov. is described from specimens dredged from the lagoon at Chesterfield Reefs, Coral Sea. This is the first record of a member of the Smethinae outside of the Atlantic and Pacific coasts of America. *S. corallica* differs from the other two described species by the shapes of the rostrum, antennal peduncle, third maxilliped, female spermathecal openings and the first male pleopod.

**Key words.** — Crustacea, Brachyura, Raninidae, Smethinae, *Smethis corallica* sp. nov., Indo-West Pacific.

**Résumé.** — *Smethis corallica* sp. nov. est décrite d'après des spécimens récoltés par dragage dans le lagon des îles Chesterfield, en mer de Corail. C'est la première fois qu'un membre de la sous-famille des Smethinae est signalé en-dehors des côtes atlantique et pacifique américaines. *S. corallica* diffère des deux autres espèces du genre décrites par la forme du rostre, des pédoncules antennaires, des troisièmes maxillipèdes, des ouvertures des spermathèques de la femelle, des premiers pléopodes mâles.

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The family Raninidae has its greatest diversity within the Indo-Pacific region and until recently only two genera, *Cyrtorhina* Monod and *Smethis* Weber, were considered not to occur there. SERÈNE and UMALI (1972) described a new species of *Cyrtorhina*, *C. balabacensis* from the Sulu Sea, and with the discovery of the new species described here, all known raninid genera are now known from the Indo-West Pacific.

The discovery of this new species was made possible by an invitation to the author from Dr. Bertrand RICHER DE FORGES to accompany an ORSTOM expedition, 'Corail 2', to the Chesterfield Reefs, in the Coral Sea. The majority of the rich catch of new and interesting species still remain to be sorted before major descriptive work can be undertaken, but the novelty of the present species was recognised during the preliminary on-board sorting.

Abbreviations in the text are QM for Queensland Museum and MNHN for Muséum national d'Histoire naturelle. Measurements are of carapace length including rostrum, and carapace breadth at the widest point. Drawings were made with the aid of a camera lucida.

*Smethis corallica* sp. nov.

(Fig. 1; Plate I)

MATERIAL EXAMINED. — Holotype, ♀ 24.0 × 15.6 mm, Chesterfield Reefs Lagoon, Coral Sea, 19°14.99' S-158°50.89' E, dredged 64 m, 24.7.1988, P. DAVIE and B. RICHER DE FORGES (MNHN-B 20795). — Paratypes, ♀ 23.3 × 15.2 mm, ♂ 18.3 × 12.2 mm, Chesterfield Reefs Lagoon, Coral Sea, 19°12.01' S-158°35.98' E, dredged 60 m, 25.7.1988, P. DAVIE and B. RICHER DE FORGES (♀ = QMW 15634; ♂ = MNHN-B 20895).

DESCRIPTION

Carapace eroded, elongate, sub-oval in shape, convex along the mid-line and from side to side, length (including rostrum) 1.50-1.54 times width. Rostrum produced anteriorly, bluntly pointed, slightly deflexed, with a pair of small lateral accessory lobes about half way along. Orbital cups disposed laterally, small and formed by anterior projections of the carapace such that a long lateral fissure is formed between the blunt supraorbital tooth and the ventral tooth; this fissure expands to a narrow smooth hollow towards its base; floor of orbit formed by the upper margin of the basal antennal article. Eystalk moveable, calcified anteriorly, cornea small, not visible from above when retracted although just visible when viewed from the front. Orbito-rostral region as a whole, is constricted in dorsal view, and is deeply eroded at the base so that it appears to lie on a lower plane to the rest of the carapace. The hollowed area behind the orbito-rostral region is studded with a number of flat-topped, mushroom shaped tubercles and is prolonged anteriorly into the base of the rostrum and posteriorly as twin oblique medial sulci which define a 'pseudo-rostrum' on the higher plane of the carapace proper; either side of this pseudo-rostrum are sinuous lobes which lie directly behind and mirror the orbital lobes. The surface of most of the carapace appears to be a fused pavement of the mushroom-shaped tubercles that are present behind the rostrum; anterior two thirds with regular, almost symmetrical, eroded depressions; gastric grooves strongly defined. Two blunt anterolateral hepatic spines are present. Anterolateral margin divergent posteriorly, longer than posterolateral; carapace widest at anterolateral and posterolateral junction; posterolateral margin with a slightly concave costate rim; width of posterior margin about equal to width at base of orbito-rostral region.

Male abdomen with seven segments, usually five segments visible in dorsal view; fringed with a thick mat of setae laterally. First abdominal segment a little less than width of posterior margin, approximately four times wider than long; second abdominal segment about 3 times wider than long and slightly longer than first segment; segments 3-7 slowly tapering. All segments covered in close set granules as on the carapace; medially swollen with anterior and posterior transverse, smooth sulci; smooth depressed areas either side of medial swelling. Lateral setae extend across posterior margins of segments 5-7. Posterior margin of penultimate segment wider than width of insertion of telson; telson rounded. Female abdomen of similar form but a little wider.

Cheliped: Merus short and stout with concave inner border bearing short setae, and convex outer border bearing long setae on proximal half; outer face rounded, minutely granular. Carpus also stout, with several prominent setiferous tubercles on proximal half of

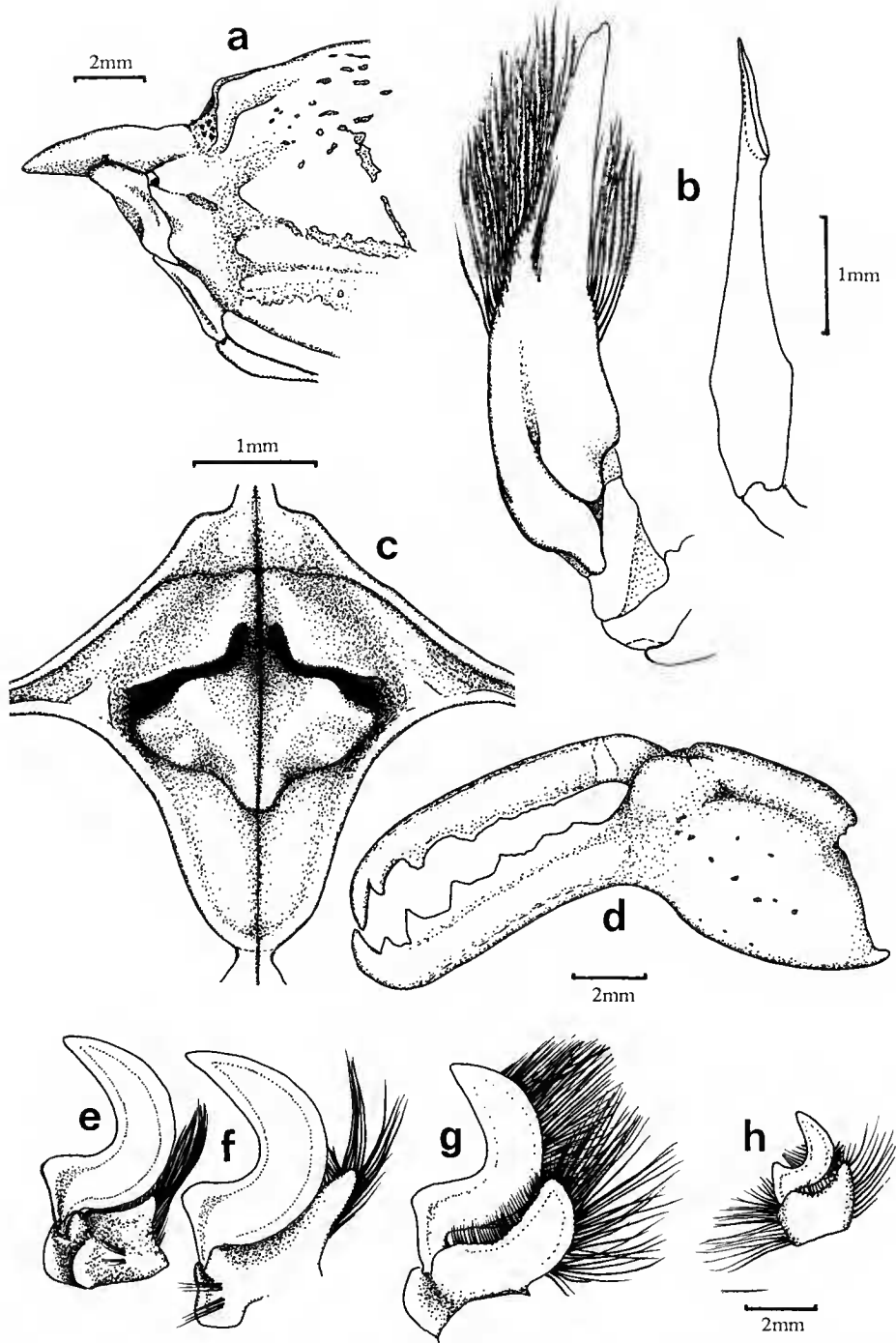


FIG. 1. — *Smethis corallica* sp. nov.: a, c-h, holotype ♀; b, paratype ♂. a, lateral view of frontal region of carapace; b, first and second male pleopods; c, female spermathecal openings; d, left chela, outer face; e-h, first to fourth propodi and dactyli of walking legs.

inner border. Palm swollen, upper margin slightly convex, lower margin markedly convex; horizontal sulcus about one quarter distance from superior margin; fixed finger strongly deflexed, shallow longitudinal sulcus below cutting margin and another parallel with lower margin, teeth becoming larger and more acute distally and finger terminating in a strongly recurved acute tooth; dactylus parallel to fixed finger, with only a small gape at base, teeth of similar form, and intermesh with the lower teeth; the tip of the dactylus closes interior to fixed finger. Both fingers have 2-3 uneven medial, longitudinal rows of raised granules.

Second leg with thick fringe of setae; carpus with a median dorsal carina terminating in a thin lamella distally, anterior to this lamella on the frontal margin is a blunt triangular tooth; propodus with twin dorsal lamellae, a strong triangular tooth on the anterior face, and the lower margin produced distally as a thin tongue in dorsal view; carpus and propodus with raised irregular granules; dactylus smooth and strongly recurved to form a sickle-shape, folding backward beside ventral tongue of propodus. Third leg similar but anterior face of carpus is more coarsely granular, the forward dorsal lamella on the propodus is wanting, and the distal ventral tongue of the propodus is much longer and bordered with coarse granules. Fourth leg with anterior dorsal distal lamella of carpus much reduced, anterior face flatter and almost smooth, and posterior dorsal face broader and more convex; propodus with a single anterior dorsal lamella, and with a long distal ventral tongue as on the third leg; dactyl of similar shape to other legs but closing against the opposite side of the ventral prolongation of the propodus. Fifth legs markedly smaller than the preceding, inserted above and anterior to third and fourth legs, and lying along the posterior margin of the carapace; of similar form to fourth leg but with weaker development of the anterior dorsal lamella on the propodus and a smaller ventral distal tongue.

Ischium of third maxilliped greatly elongated, approximately twice the length of the merus, evenly paved with small granules as on the carapace; merus with inner margin straight, outer margin broadly convex, approximately 1.6 times longer than wide, a shallow longitudinal sulcus parallel to inner border; palp minute, inserted subdistally on posterior face and not visible in frontal view; exognath reaches slightly further than articulation of merus and ischium. Sub-hepatic region with blunt tooth at base of basal antennal segment; with a pair of shallow, eroded, longitudinal furrows which become obsolete posteriorly adjacent to merus of cheliped. Antenna with broad, massive, basal antennal article forming floor of orbit, and anterolateral margin of the bucal frame, and extending anteriorly to slightly in front of the lateral lobes of the rostrum; the second segment lies as a narrow strip along the internal edge of the basal segment and extends only as far as the level of the lateral lobes of the rostrum; flagellum obsolete. Antennule is hidden behind the antennal peduncle and is not visible in normal frontal view.

The spermathecal openings of the female and the shape of the first and second male pleopods are as in the accompanying figures.

*Colouration* : Base colour is cream with a few variable patches of orange. The most obvious of these are : a large patch at the anterolateral end of the gastric groove; a less distinct patch at the middle of the posterolateral border; small irregular spots on upper surface of the carpus of the cheliped; a band of orange encircling the dactyl just prior to the proximal end, which becomes faint mid-dorsally; and slight orange darkening to the tips of the fingers.

**DISTRIBUTION.** — Only known from the lagoon at the Chesterfield Reefs, Coral Sea.

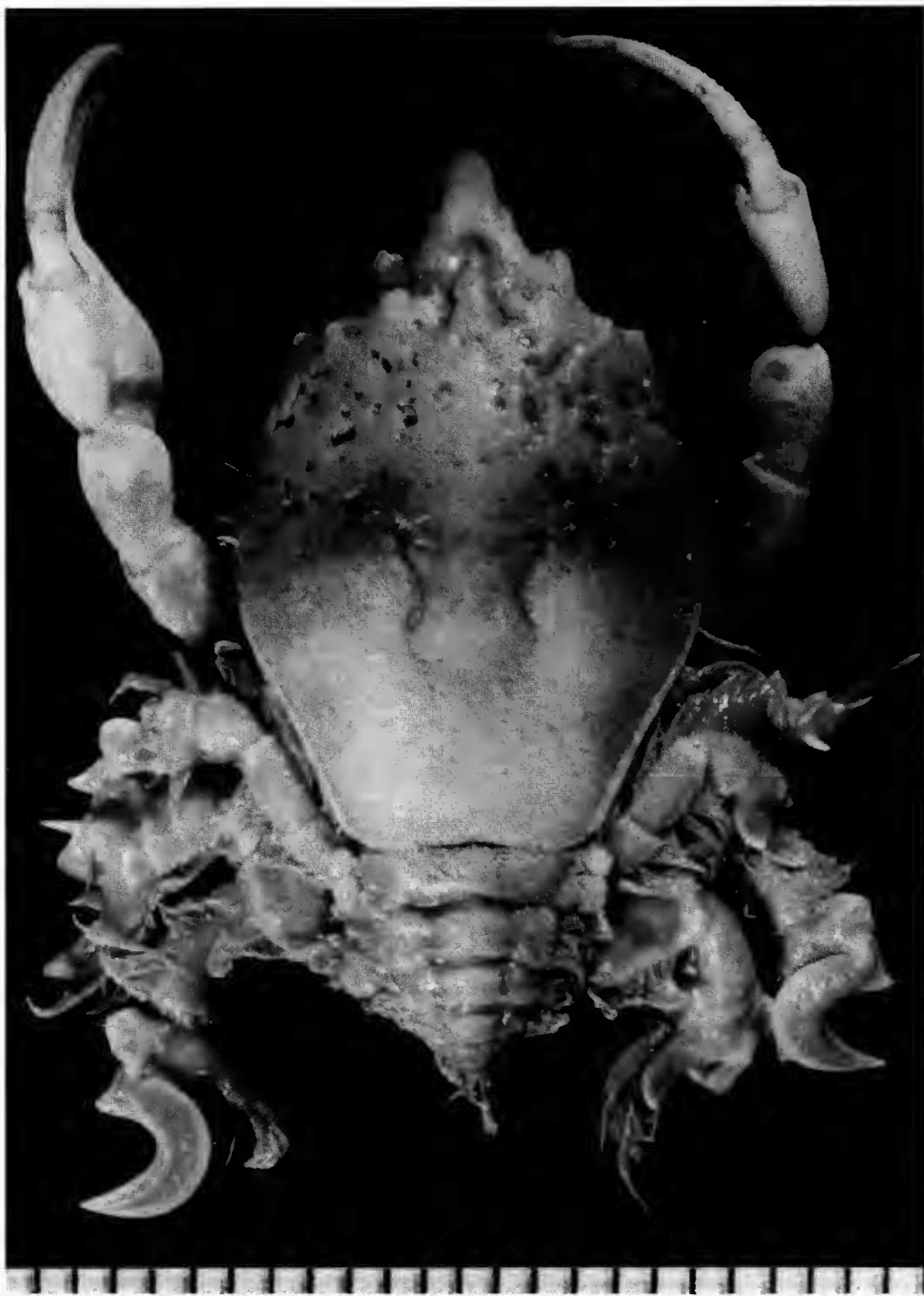


PLATE I. — *Smethis corallica* sp. nov., holotype ♀. Scale line in mm.

## REMARKS

This new species is the first record for this genus outside of the American region. Although it is clearly a new species, it is remarkable how closely the three species of *Symethis* now known resemble each other. *Symethis garthi* Goeke, and *S. variolosa* (Fabricius) apparently both occur on substrates of shell and shell hash, although *S. garthi* may also occur on mud sand bottoms, and on coral and rocky bottom (GOEKE, 1981). *S. corallica* was found on a sandy bottom of a coral reef lagoon, containing a high proportion of broken shell and large foraminiferans, so the habitat is similar.

*S. corallica* sp. nov. is most conspicuously separated from both the other described species by the absence of an antennal flagellum, the second segment of the antennal peduncle is less anteriorly projecting than the basal segment, the lateral lobes of the rostrum are much less prominent and lie further back towards the base, and the length and breadth ratio of the ischium of the third maxilliped is much less than twice. It differs in particular from *S. garthi*, the other Pacific species, in the shape of the first male pleopods, and the spermathecal openings of the female; slight differences in the chelae and ambulatory legs; and in the length to breadth ratio of the carapace (1.50-1.54 compared with 1.64).

As GOEKE (1981) noted for females of *S. variolosa*, both the present female specimens had their spermathecal openings completely occluded by an amorphous plug of hardened material; this he conjectured is caused by excess sperm packets transferred during copulation, remaining outside the spermathecal openings and being hardened by exposure to sea water. The plug on the holotype female was removed so that the structure of the spermathecal openings could be examined.

ETYMOLOGY — The name *corallica* is derived from both the coral reef habitat and the Coral Sea in which this species has been found.

## Acknowledgements

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